

# **R716S**

# **Portable LoRa Field Signal Meter**

## **User Manual**

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# 1. Introduction

R716S is developed based on LoRa technology to detect the network signal of the LoRa network. R716S can detect the LoRa signal strength of the scanned area and display the detected data through LCD.

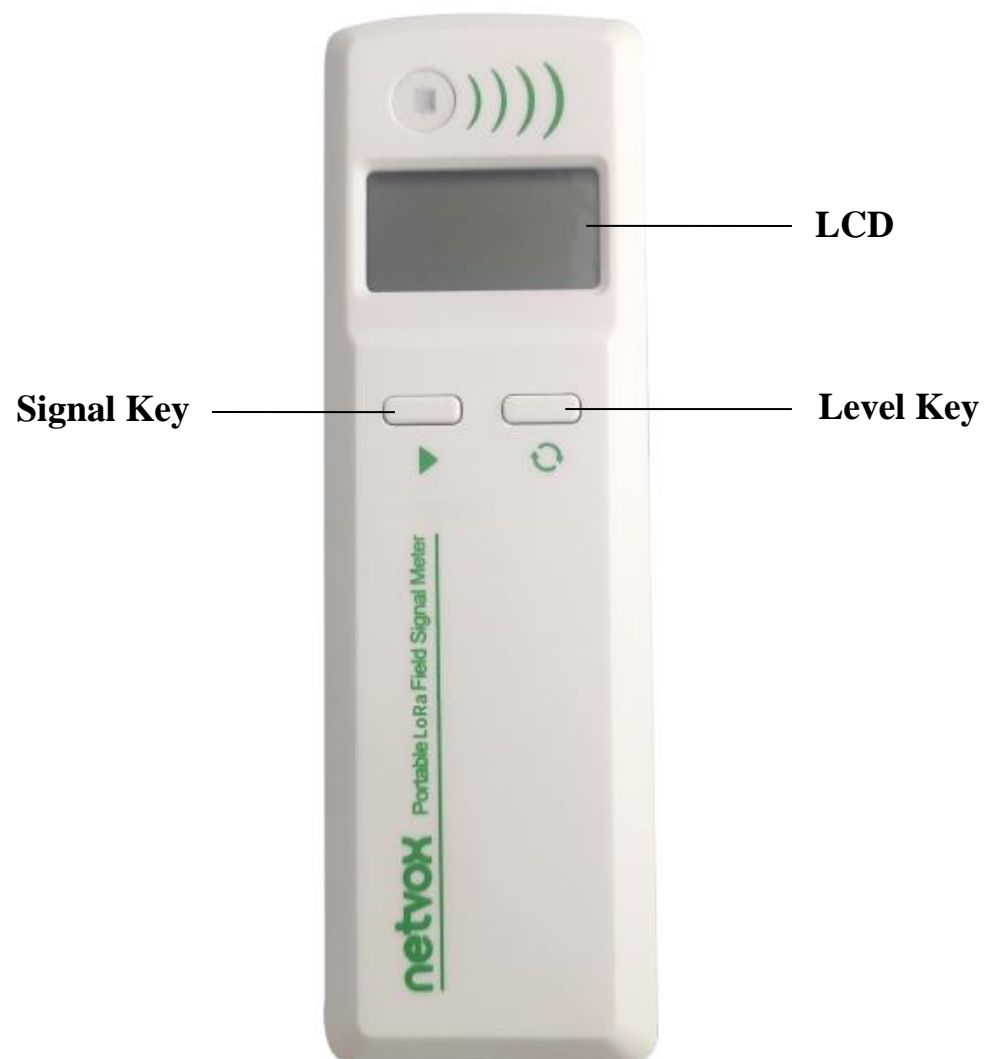
## **LoRa Wireless Technology**

LoRa is a wireless communication technology dedicated to long-distance and low power consumption. Compared with other communication methods, LoRa spread spectrum modulation method greatly increases to expand the communication distance. Widely used in long-distance, low-data wireless communications. For example, automatic meter reading, building automation equipment, wireless security systems, and industrial monitoring. The features include small size, low power consumption, transmission distance, anti-interference ability, and so on.

## **LoRaWAN**

LoRaWAN uses LoRa technology to define end-to-end standard specifications to ensure interoperability between devices and gateways from different manufacturers.

## 2. Appearance



## 3. Features

- Compatible with LoRaWAN™ Class A
- 2\* AA 1.5V batteries
- Detect signal strength between gateway and device
- LCD screen
- IP40
- Frequency hopping spread spectrum technology
- Low power consumption and long battery life

Note: Please visit [http://www.netvox.com.tw/electric/electric\\_calc.html](http://www.netvox.com.tw/electric/electric_calc.html) for detailed information about battery life.

## 4. Setup Instructions

### 4.1 Power on

Step 1. Open the battery cover.




Step 2. Insert 2 AA 1.5V batteries.



Step 3. Close the cover.

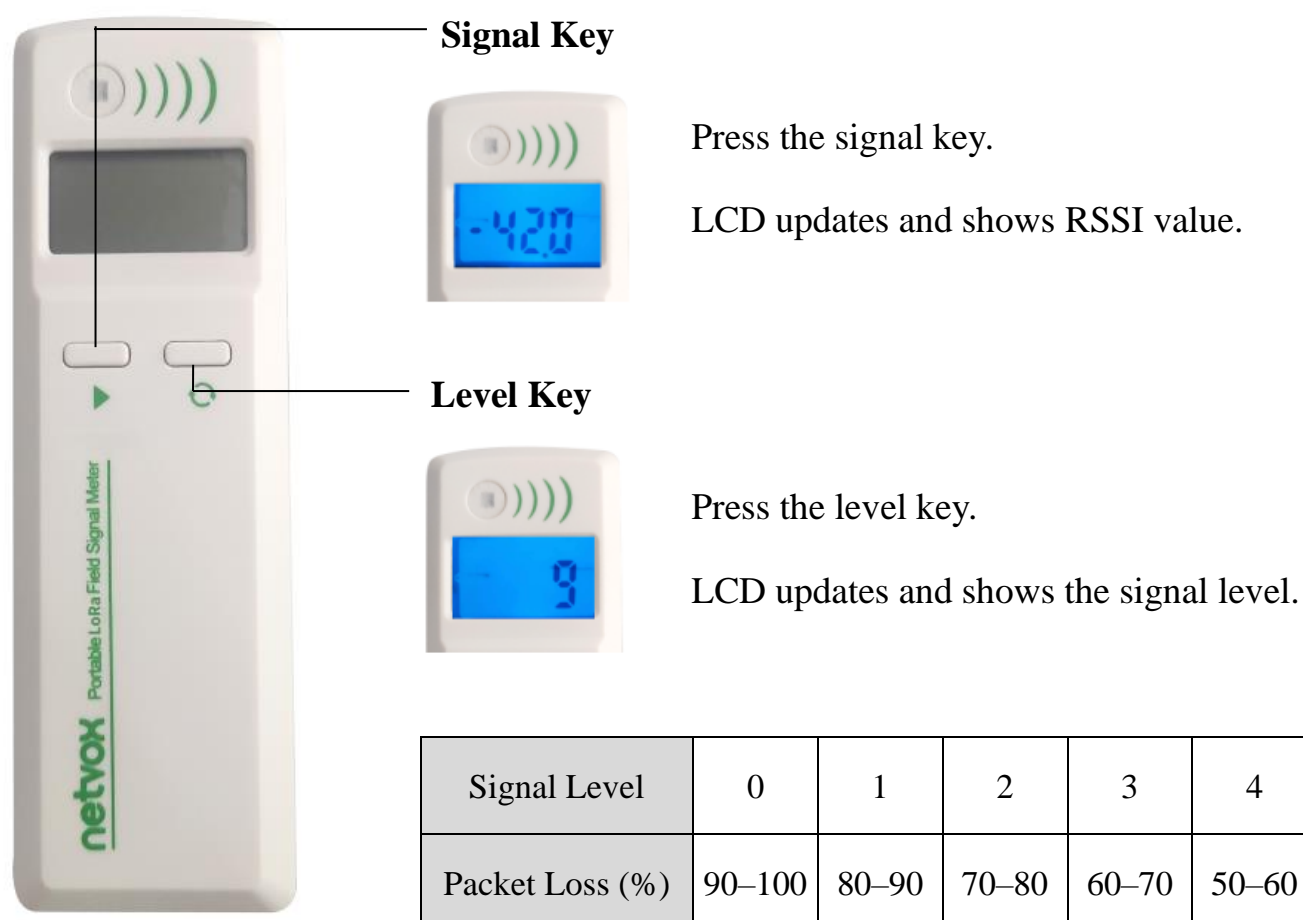


Step 4. The LCD shows .

When R716S successfully joins the network, it starts detection and displays the current signal.

If R716S fails to join the network, it shows **noNE**.

## 4.2 Function Key and LCD



**Step 1.** Press any key to activate the device. The LCD shows **noNE**.

**Step 2.** If R716S successfully joins the network, the LCD lights up and displays RSSI or signal level.

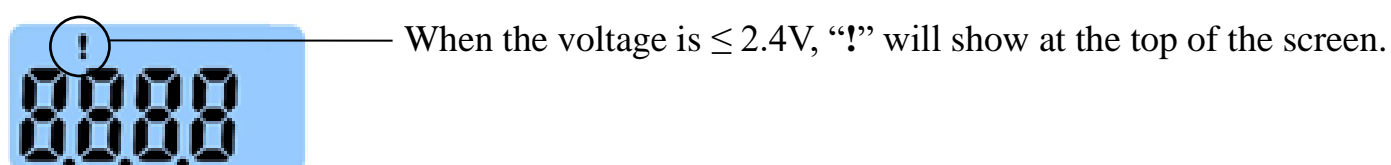
**Step 3.** When R716S is not activated in 40 seconds, it will be in sleep mode.

If any key is pressed in 40 seconds, the LCD shows **noNE** first and then starts a whole new round of detection.

Note:

- (1) R716S could show “**noNe**” due to the poor connection of the network, interruption of signal, or long-distance communication. It would start detection only when the network connection is stable. Pressing the signal key or the level key would not activate the device.
- (2) R716S shows “**noNE**” first after any key is pressed, and then starts to update the signal value.
- (3) R716S would refresh the data every 5 seconds during the first 30 seconds and show the final data during the last 10 seconds.
- (4) To get an accurate result, please wait until the final detection result is shown on the LCD.

## 4.3 Low Voltage Alarm



## 5. Example of NetvoxLoRaWANRejoin

(To check if the device is still in the network. If the device is disconnected, it will automatically rejoin back to the network.)

Fport: 0x20

CmdDescriptor	CmdID (1 byte)	Payload (5 bytes)	
SetNetvoxLoRaWANRejoinReq	0x01	RejoinCheckPeriod (4 Bytes, Unit: 1s 0xFFFFFFFF Disable NetvoxLoRaWANRejoinFunction)	RejoinThreshold (1 Byte)
SetNetvoxLoRaWANRejoinRsp	0x81	Status (1 Byte, 0x00_success)	Reserved (4 Bytes, Fixed 0x00)
GetNetvoxLoRaWANRejoinReq	0x02	Reserved (5 Bytes, Fixed 0x00)	
GetNetvoxLoRaWANRejoinRsp	0x82	RejoinCheckPeriod (4 Bytes, Unit: 1s)	RejoinThreshold (1Byte)

### (1) Command Configuration

Set RejoinCheckPeriod = 60min (0x0E10), RejoinThreshold = 3 (times)

Downlink: 0100000E1003

Response:

810000000000 (Configuration success)

810100000000 (Configuration failure)

### (2) Read current configuration

RejoinCheckPeriod = 60min (0x0E10), RejoinThreshold = 3 (times)

Downlink: 020000000000

Rthe esponse: 8200000E1003

Note:

- Set RejoinCheckThreshold as 0xFFFFFFFF to stop the device from rejoining the network.
- The last configuration would be kept as user reset the device back to the factory setting.
- Default setting: RejoinCheckPeriod = 2 (hr) and RejoinThreshold = 3 (times)

## 6. Important Maintenance Instructions

Kindly pay attention to the following to achieve the best maintenance of the product:

- Keep the device dry. Rain, moisture, or any liquid might contain minerals and thus corrode electronic circuits. If the device gets wet, please dry it completely.
- Do not use or store the device in a dusty or dirty environment. It might damage its detachable parts and electronic components.
- Do not store the device under excessively hot conditions. High temperatures can shorten the life of electronic devices, destroy batteries, and deform or melt some plastic parts.
- Do not store the device in places that are too cold. Otherwise, when the temperature rises to normal temperature, moisture will form inside, which will destroy the board.
- Do not throw, knock, or shake the device. Rough handling of equipment can destroy internal circuit boards and delicate structures.
- Do not clean the device with strong chemicals, detergents, or strong detergents.
- Do not apply the device with paint. Smudges might block the device and affect the operation.
- Do not throw the battery into the fire, or the battery will explode. Damaged batteries may also explode.

All of the above applies to your device, battery, and accessories. If any device is not working properly, please take it to the nearest authorized service facility for repair